Mr. Kenneth L. Robinson
U.S. Aggregates Inc.
5400 West 86th Street
Indianapolis, IN 46268

Re: Initial Site Approval (INDOT No.5210),
T 089-11824, Plt ID 089-05210

Dear Mr. Robinson

This letter grants approval to construct the portable UNIT, INDOT No. 5210, described in Source Modification No. 089-11824, to be initially located at 1 North Broadway, Gary, Indiana, in Lake County. Issuance of the validation letter cited in Condition C.17 of this permit will authorize operation at this site.

A two-week advance notice of start-up is required in order for IDEM to perform an inspection. If the plant is not operating in compliance with all applicable regulations upon inspection, the plant must cease operation upon notification to you by IDEM staff of such non-compliance. Operations may only resume once remedial actions have been taken.

If you have any questions concerning this permit, please contact Mark L. Kramer at the above address or via phone at or at 631-691-3395 or in Indiana 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

MLK/MES
cc: File - Gary County
Lake County Health Department
Northwest Indiana Office
Gary Division of Air Pollution Control
Air Compliance Inspector - Rick Massoels
Administration & Development - Janet Mobley
Compliance Data Section - Karen Nowak
Technical Support Modeling - Michele Boner

Kenneth L. Robinson
U.S. Aggregates Inc.
5400 West 86th Street
Indianapolis, IN 46268

Re: Significant Source Modification No:
**089-11824-05210**

Dear Mr. Robinson:

U.S. Steel Gary Works. applied for a Part 70 operating permit on December 13, 1996 for a steel mill. An application to modify the source was received from U.S. Aggregates Inc. on January 28, 2000. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

One (1) portable crushing, screening and conveying plant, capacity: 400 tons of steel mill slag per hour, consisting of:

(a) One (1) grizzly hopper, known as GH-1, capacity: 400 tons of steel mill slag per hour.

(b) One (1) primary crusher, known as CR-1, capacity: 200 tons of steel mill slag per hour.

(c) One (1) conveyor, known as CO-1, capacity: 400 tons of steel mill slag per hour.

(d) One (1) radial stacker, known as CO-2, capacity: 175 tons of steel mill slag per hour.

(e) One (1) radial stacker, known as CO-3, capacity: 125 tons of steel mill slag per hour.

(f) One (1) radial stacker, known as CO-4, capacity: 50 tons of steel mill slag per hour.

(g) One (1) conveyor, known as CO-5, capacity: 50 tons of steel mill slag per hour.

(h) One (1) grizzly troughs, known as CO-6, capacity: 250 tons of steel mill slag per hour.

(i) One (1) 3-deck sizing screen, known as SS-1, equipped with water spray, known as CE-1, capacity: 400 tons of steel mill slag per hour.

(j) One (1) diesel powered electric generator, known as E-1, rated at168 horsepower or 0.426 million British thermal units per hour, exhausted through Stack E-1.

(k) One (1) storage tank, known as T-1, exhausted through stack T-1, capacity: 550 gallons of diesel fuel.

The proposed Significant Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). If there are no changes to the proposed construction of the emission units, the source may begin operating on the date that IDEM receives an affidavit of construction pursuant to 326 IAC 2-7-10.5(h). If there are any changes to the proposed construction the source can not operate until an Operation Permit Validation Letter is issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Mark L. Kramer, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments
MLK/MES
cc: File - Lake County
U.S. EPA, Region V
Lake County Health Department
Gary Division of Air Pollution Control
Northwest Regional Office
Air Compliance Section Inspector - Rick Massoels
Compliance Data Section - Mendy Jones
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner
U.S. Steel Gary Works

# PART 70 SIGNIFICANT SOURCE MODIFICATION
# OFFICE OF AIR MANAGEMENT
# and Gary Division of Air Pollution Control

## U.S. Aggregates Inc.
**(portable)**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

| | |
|---|---|
| Source Modification No.: 089-11824-05210 | |
| Issued by:<br>Paul Dubenetzky, Branch Chief<br>Office of Air Management | Issuance Date: |

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**SECTION A SOURCE SUMMARY**

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) and the Gary Division of Air Pollution Control. The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a portable crushing, screening and conveying plant.

| | |
|---|---|
| Responsible Official: | Kenneth Robinson |
| Initial Portable Source Address: | 1 North Broadway, Gary, Indiana 46402 |
| Mailing Address: | 5400 West 86th Street, Indianapolis, Indiana 46268 |
| Phone Number: | 317 - 875 - 4670 |
| SIC Code: | 3295 |
| County Location: | Lake |
| County Status: | Nonattainment for PM10, Ozone and $SO_2$<br>Attainment for all other criteria pollutants |
| Source Status: | Part 70 Permit Program<br>Major Source, under Emission Offset Rules;<br>Major Source, Section 112 of the Clean Air Act<br>1 of the 28 Major PSD Source Categories |

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This portable plant is approved to construct and operate the following emission units and pollution control devices:

One (1) portable crushing, screening and conveying plant, capacity: 400 tons of steel mill slag per hour, consisting of:

(a) One (1) grizzly hopper, known as GH-1, capacity: 400 tons of steel mill slag per hour.

(b) One (1) primary crusher, known as CR-1, capacity: 200 tons of steel mill slag per hour.

(c) One (1) conveyor, known as CO-1, capacity: 400 tons of steel mill slag per hour.

(d) One (1) radial stacker, known as CO-2, capacity: 175 tons of steel mill slag per hour.

(e) One (1) radial stacker, known as CO-3, capacity: 125 tons of steel mill slag per hour.

(f) One (1) radial stacker, known as CO-4, capacity: 50 tons of steel mill slag per hour.

(g) One (1) conveyor, known as CO-5, capacity: 50 tons of steel mill slag per hour.

(h) One (1) grizzly troughs, known as CO-6, capacity: 250 tons of steel mill slag per hour.

(i) One (1) 3-deck sizing screen, known as SS-1, equipped with water spray, known as CE-1, capacity: 400 tons of steel mill slag per hour.

(j) One (1) diesel powered electric generator, known as E-1, rated at168 horsepower or 0.426 million British thermal units per hour, exhausted through Stack E-1.

(k) One (1) storage tank, known as T-1, exhausted through stack T-1, capacity: 550 gallons of diesel fuel.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions [326 IAC 2-7-1]

Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

However, in the event that the Title V application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.

(2) If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.

(3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will issued after EPA review.

**SECTION C GENERAL OPERATION CONDITIONS**

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, on the attached Certification Form, with each submittal.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days but no more than ninety (90) days) after issuance of this approval, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
Suite 1012
504 Broadway
Gary, Indiana 46402

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAM, and Gary Division of Air Pollution Control upon request and shall be subject to review and approval by IDEM, OAM, and Gary Division of Air Pollution Control. IDEM, OAM, and Gary Division of Air Pollution Control may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.

(b) Any application requesting an amendment or modification of this approval shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
Suite 1012
504 Broadway
Gary, Indiana 46402

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), visible emissions shall meet the following, unless otherwise stated in this approval:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

C.7 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.8 Fugitive Dust Emissions [326 IAC 6-1-11.1]

The Permittee shall be in violation of 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), if the opacity of fugitive particulate emissions including from paved and unpaved roads, material transfer, wind erosion from storage piles and material transportation activities, exceeds ten percent (10%). Compliance with this opacity limit shall be achieved by controlling fugitive particulate matter emissions according to the plan submitted on January 28, 2000. This plan consists of applying water on an as-needed basis to unpaved roads and storage piles.

C.9 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), except when located in Lake County, fugitive particulate matter emissions shall be controlled according to the plan submitted on January 28, 2000. This plan consists of applying water on an as-needed basis to unpaved roads and storage piles.

**Testing Requirements [326 IAC 2-7-6(1)]**

C.10 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
Suite 1012
504 Broadway
Gary, Indiana 46402

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAM and Gary Division of Air Pollution Control within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, and Gary Division of Air Pollution Control, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]**

C.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

**Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]**

C.12 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this approval;

(3) The Compliance Monitoring Requirements in Section D of this approval;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this approval; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this approval. CRP's shall be submitted to IDEM, OAM and Gary Division of Air Pollution Control upon request and shall be subject to review and approval by IDEM, OAM, and Gary Division of Air Pollution Control. The CRP shall be prepared within ninety (90) days after issuance of this approval by the Permittee and maintained on site, and is comprised of:

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this approval; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this approval, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the approval unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the approval conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the approval, and such request has not been denied or;

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

C.14 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]

(a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM and Gary Division of Air Pollution Control may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, and Gary Division of Air Pollution Control representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or Gary Division of Air Pollution Control makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or Gary Division of Air Pollution Control within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this approval;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this approval, and whether a deviation from an approval condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.

C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The reports required by conditions in Section D of this approval shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Division of Air Pollution Control
Suite 1012
504 Broadway
Gary, Indiana 46402

(b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, and Gary Division of Air Pollution Control on or before the date it is due.

(c) Unless otherwise specified in this approval, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period.

**Portable Source Requirement**

C.17 Relocation of Portable Sources [326 IAC 2-14-4]

(a) This permit is approved for operation in all areas of Indiana. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2 and 40 CFR 52.21, and Emission Offset requirements in 326 IAC 2-3. A thirty (30) day advance notice of relocation must be given to IDEM, OAM, and a "Relocation Site Approval" letter must be obtained before relocating.

(b) The Permittee shall also notify the applicable local air pollution control agency when relocating to, or from, one the following:

(1) Madison County - (Anderson Office of Air Management)

(2) City of Evansville plus four (4) miles beyond the corporate limits but not outside Vanderburgh County - (Evansville EPA)

(3) City of Gary - (Gary Division of Air Pollution)

(4) City of Hammond - (Hammond Department of Environmental Management)

(5) Marion County - (Indianapolis Air Pollution Control Agency)

(6) St. Joseph County - (St. Joseph County Health Department)

(7) Vigo County - (Vigo County Air Pollution Department)

(c) A valid operation permit consists of this document and any subsequent “Relocation Site Approval” letter specifying the current location of the portable plant.

**SECTION D.1 FACILITY OPERATION CONDITIONS**

Facility Description [326 IAC 2-7-5(15)]

One (1) portable crushing, screening and conveying plant, capacity: 400 tons of steel mill slag per hour, consisting of:

(a) One (1) grizzly hopper, known as GH-1, capacity: 400 tons of steel mill slag per hour.

(b) One (1) primary crusher, known as CR-1, capacity: 200 tons of steel mill slag per hour.

(c) One (1) conveyor, known as CO-1, capacity: 400 tons of steel mill slag per hour.

(d) One (1) radial stacker, known as CO-2, capacity: 175 tons of steel mill slag per hour.

(e) One (1) radial stacker, known as CO-3, capacity: 125 tons of steel mill slag per hour.

(f) One (1) radial stacker, known as CO-4, capacity: 50 tons of steel mill slag per hour.

(g) One (1) conveyor, known as CO-5, capacity: 50 tons of steel mill slag per hour.

(h) One (1) grizzly troughs, known as CO-6, capacity: 250 tons of steel mill slag per hour.

(i) One (1) 3-deck sizing screen, known as SS-1, equipped with water spray, known as CE-1, capacity: 400 tons of steel mill slag per hour.

(j) One (1) diesel powered electric generator, known as E-1, rated at168 horsepower or 0.426 million British thermal units per hour, exhausted through Stack E-1.

(k) One (1) storage tank, known as T-1, exhausted through stack T-1, capacity: 550 gallons of diesel fuel.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.1.1 Emission Offset [326 IAC 2-3]

(a) In order to avoid the applicability of 326 IAC 2-3 (Emission Offset), the input of steel mill slag to the portable crushing, screening and conveying plant shall not exceed 572,549 tons per twelve (12) consecutive month period.

(b) The total input of No. 2 diesel fuel oil to the diesel generator shall be limited to 8,620 gallons. This fuel limit is equivalent to 2.604 tons of NOx. Compliance with this limit will assure that the $NO_X$ emissions from the entire source shall remain less than the de minimus level.

(c) At or before 8,620 gallons of No. 2 diesel fuel oil are combusted in the diesel generator or no later than nine (9) months after the date of start-up of operations (which ever occurs first), the diesel generator shall be removed from the site and the source of power shall be switched to offsite generated electricity.

(d) Any change or modification which may increase potential to emit from processes to twenty-five (25) tons per year of VOC per year from this portable plant, shall cause this plant to be considered a major source under Emission Offset, 326 IAC 2-3, and shall require approval from IDEM, OAM prior to making the change.

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the crushing, for the screening and for the conveying operations.

**Compliance Determination Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

D.1.3 Testing Requirements [326 IAC 2-7-6(1)] [326 IAC 2-1.1-11]

The Permittee is not required to test these facilities by this permit. However, IDEM may require compliance testing when necessary to determine if these facilities are in compliance. If testing is required by IDEM, compliance with the opacity limits pursuant to 326 IAC 5-1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

D.1.4 Visible Emissions Notations

(a) Visible emission notations of the crushing, the screening and conveying operations shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

**Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

D.1.5 Record Keeping Requirements

(a) To document compliance with Condition D.1.4, the Permittee shall maintain records of daily visible emission notations for the crushing, the screening and conveying operations.

(b) To document compliance with Condition D.1.1(a), the Permittee shall maintain records at the plant of the steel mill slag input.

(c) To document compliance with Conditions D.1.1(b) and (c), the Permittee shall maintain records in accordance with (1) through (3) below.

(1) Start-up date of operations,

(2) Actual No. 2 diesel fuel oil usage and equivalent $NO_X$ emissions, and

(3) Removal date of the diesel generator.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.6 Reporting Requirements

Quarterly summary to document compliance with operation condition numbers D.1.1(a) and D.1.1(b) shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter or six (6) month period being reported. These reports shall include the monthly input of steel slag, the amount of No. 2 diesel fuel oil used each month, the start-up date of operations and the removal date of the diesel generator. All records and reports shall use calendar months.

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
## OFFICE OF AIR MANAGEMENT
### COMPLIANCE DATA SECTION
### Gary Division of Air Pollution Control

### PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: U.S. Aggregates Inc.
Source Address: 1 North Broadway, Gary, Indiana 46402
Mailing Address: 5400 West 86th Street, Indianapolis, Indiana 46268
Source Modification No.: 089-11824-05210

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.**

Please check what document is being certified:

**9** Test Result (specify) _____

**9** Report (specify) _____

**9** Notification (specify) _____

**9** Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
## OFFICE OF AIR MANAGEMENT
### COMPLIANCE DATA SECTION
### Gary Division of Air Pollution Control

**Part 70 Source Modification Quarterly Report**

Source Name: U.S. Aggregates Inc.
Source Address: 1 North Broadway, Gary, Indiana 46402
Mailing Address: 5400 West 86th Street, Indianapolis, Indiana 46268
Source Modification No.: 089-11824-05210
Facility: Crushing, screening, conveying and transporting steel mill slag
Parameter: Input of Steel Mill Slag
Limit: 572,549 tons per twelve (12) consecutive month period

YEAR: _____

| Month | Tons of Slag This Month | Tons of Slag Previous 11 Months | Tons of Slag 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**9** No deviation occurred in this month.

**9** Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
## OFFICE OF AIR MANAGEMENT
### COMPLIANCE DATA SECTION
### Gary Division of Air Pollution Control

**Part 70 Source Modification Quarterly Report**

Source Name: U.S. Aggregates Inc.
Source Address: 1 North Broadway, Gary, Indiana 46402
Mailing Address: 5400 West 86th Street, Indianapolis, Indiana 46268
Source Modification No.: 089-11824-05210
Facility: Diesel powered electric generator
Parameter: Gallons of No. 2. diesel fuel oil
Limit: 8,620 gallons, equivalent to 2.604 tons of $NO_X$
Start-up Date of Operation: _____

Removal Date of Diesel Generator (not to exceed nine (9) months from start-up date)_____

YEAR: _____

| Month | Gallons of No. 2 Diesel Fuel Oil This Month | Gallons of No. 2 Diesel Fuel Oil Total From Start-up Date |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**9** No deviation occurred in this month.

**9** Deviation/s occurred in this month.
Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

# Indiana Department of Environmental Management
# Office of Air Management

Addendum to the
Technical Support Document for a Part 70 Significant Source Modification

**Source Name:** **U. S. Aggregates Inc.**
**Source Location:** **One North Broadway, Gary, Indiana 46402**
**County:** **Lake**
**SIC Code:** **3295**
**Source Modification:** **089-11824-00182**
**Permit Reviewer:** **Mark L. Kramer**

On March 17 and 18, 2000, the Office of Air Management (OAM) had a notice published in The Times in Munster and the Gary Post Tribune in Gary, Indiana, stating that U. S. Aggregates Inc. had applied for a Significant Source Modification for a crushing, screening and conveying of steel mill slag source with control. The notice also stated that OAM proposed to issue a Significant Source Modification for this operation and provided information on how the public could review the proposed Significant Source Modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Significant Source Modification should be issued as proposed.

On April 20, 2000, William S. Kubiak of U. S. Steel, Gary Works, submitted comments on the proposed Significant Source Modification. The comments are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**

**Comment 1:**

Source Definition: The Technical Support Document concludes that the proposed U.S. Aggregates, Inc. facility is part of the U.S. Steel, Gary Works major source. U.S. Steel agrees with this conclusion.

**Response 1:**

As the U.S. Aggregates Inc. facilities were included in the U.S. Steel, Gary Works source, no changes to the proposed permit are required.

**Comment 2:**

Potential to Emit of Modification: U.S. Steel understands that the Potential to Emit emissions increase for $NO_x$ and VOC are 22.8 tons/ year and 1.85 tons per year, respectively. This is based on the use of a large diesel generator at an operation rate of 8,760 hours per year.

**Response 2:**

The potential to emit as stated above is correct and therefore, does not require any changes to the permit.

**Comment 3:**

Emission Offset (326 IAC 2-3) Applicability

The Technical Support Document concludes that Emission Offset requirements do not apply since offset significance threshold values are not exceeded. U.S. Steel believes that the proposed project does not, by itself, trigger nonattainment NSR permitting requirements. However, the applicability determination failed to consider requirements at 326 IAC 2-3-1(j), which require that all other net increases (for $NO_x$ and VOC) at the source (i.e., Gary Works) over a five-year period be considered to determine if the increases are "De Minimis" and, therefore, not subject to NSR requirements. This approach is not consistent with other on-site contractor installation permits, such as the Koppers tar centrifuge project.

U.S. Steel is not willing to use any significant portion of its current $NO_x$ or VOC De Minimis account balance to cover the U.S. Aggregates proposed project and has informed them of that position. It is U.S. Steel's understanding that U.S. Aggregates will revise its application to take an operational limit on the diesel generator and agree to convert to standard electrical power within a short time of initial startup.

**Response 3:**

As this comment was provided to U.S. Aggregates, Inc., Kenneth L. Robinson of U. S. Aggregates, Inc., submitted the following response on May 15, 2000:

U. S. Aggregates, Inc. is hereby notifying IDEM, OAM that we are willing to accept the following operational limitations in order for the emissions of nitrogen oxides ($NO_X$) and volatile organic compounds (VOC) to remain at de minimus levels for emission offset applicability, to be in agreement with the U.S. Steel operational permits, and to satisfy U.S. Steel, Gary Works management's allowances to temporarily utilize a portion of their de minimus account balance:

U.S. Aggregates, Inc. shall initially power the slag crushing operation by means of one (1) diesel powered electric generator, known as E-1, rated at 125 KW (168 horsepower or 0.426 million Btu per hour), exhausted through Stack E-1 and shall be permitted to combust a maximum of 8,620 gallons of No. 2 diesel fuel (using a heating value of 137,000 Btu per gallon). The combustion of 8,620 gallons of diesel fuel will result in air emissions of nitrogen oxides in the amount of 2.604 tons.

U.S. Aggregates, Inc. shall remove the diesel generator from the site at or before 8,620 gallons of diesel fuel are combusted by the diesel generator and convert the source of power from the diesel generator to offsite generated electricity. In any event, U.S. Aggregates, Inc. agrees to remove the generator from the site within nine (9) months of the start-up of operations.

U.S. Aggregates, Inc. has the concurrence of U.S. Steel, Gary Works management with the aforementioned limitations and agrees that these limitations may be included in the Significant Source Modification.

In the proposed source modification, $NO_X$ is only emitted from the diesel generator. In order to assure that the $NO_X$ de minimus level of twenty-five (25) tons is not exceeded, U.S. Steel has allocated 2.604 tons of the remaining 16.65 tons of $NO_X$, including two (2) proposed projects, as shown in the following table.

| Present de minimis U.S. Steel, Gary Works | Emission Increases | |
|---|---|---|
| | **NOx (tons/yr)** | **VOC (tons/yr)** |
| Plate Heat Treat Furnace | 6.29 | 0.24 |
| $H_2$ Batch Anneal Furnaces | 1.22 | 0.05 |
| EPS – HSM Sludge Dryers | 0.001 | 0.02 |
| Oil Tech Modification | 0 | 0.17 |
| TBBH Boiler 4A – Repermit | 0 | 0.36 |
| Levy Modification | 0 | 0.17 |
| New 64" Continuous Pickle Line (Proposed) | 0.02 | 8.91 |
| Koppers Tar Centrifuge (Proposed) | 0.82 | 0 |
| Totals | 8.33 | 9.92 |
| **de minimis allowable** | **25.0** | **25.0** |
| **Remaining de minimis** | **16.65** | **15.08** |

Note: The emissions from the new Koppers Tar Centrifuge and the new 64" Continuous Pickle Line will only actually be included in the de minimis after facility start-up.

It is Gary Works' intent that the emissions associated with the US Aggregates project will be included only after startup and only until the allotted diesel fuel is combusted or nine months, whichever occurs first.

The following calculations determine the limited throughput of No. 2 diesel fuel equivalent to 2.604 tons of $NO_X$.

Maximum potential $NO_X$ emissions:

$$168\ \text{hp} \times \frac{\text{EF}\ \ 0.031\ \text{lb NOx}}{\text{hp} - \text{hr}} \times \frac{8{,}760\ \text{hours}}{\text{year}} = \frac{45{,}620\ \text{lb NOx}}{\text{year}}$$

$$= \frac{22.81\ \text{tons NOx}}{\text{year}}$$

To determine maximum BTU input rating of the diesel engine:

$$\frac{45{,}620\ \text{lb NOx}}{\text{year}} \times \frac{1\ \text{MMBtu}}{4.41\ \text{lb NOx}} \times \frac{1\ \text{year}}{8{,}760\ \text{hours}} = \frac{1.181\ \text{MMBth}}{\text{hour}}$$

To determine maximum gallons per hour input rating of the diesel engine:

$$\frac{1{,}181{,}000\ \text{Btu}}{\text{hour}} \times \frac{1\ \text{gallon diesel fuel}}{137{,}000\ \text{Btu}} = \frac{8.62\ \text{gallons}}{\text{hour}}$$

To determine the maximum gallons combusted in 1,000 hours:

$$\frac{8.62\ \text{gallons}}{\text{hour}} \times 1{,}000\ \text{hours} = 8{,}620\ \text{gallons}$$

To determine the maximum amount of $NO_X$ from combusting 8,620 gallons in 1,000 hours:

$$8{,}620 \text{ gallons} \times \frac{0.137 \text{ MMBtu}}{\text{gallon}} \times \frac{4.41 \text{ lb NOx}}{\text{MMBtu}} = 5{,}208 \text{ lb NOx}$$

$$= 2.604 \text{ tons NOx}$$

In order to implement the above operational conditions, IDEM, OAM has added the following conditions to the Significant Source Modification:

Condition D.1.1 has been revised as follows to add a fuel throughput limit equivalent to 2.604 tons of $NO_X$.

D.1.1 Emission Offset [326 IAC 2-3]

(a) In order to avoid the applicability of 326 IAC 2-3 (Emission Offset), the input of steel mill slag to the portable crushing, screening and conveying plant shall not exceed 572,549 tons per twelve (12) consecutive month period.

**(b) The total input of No. 2 diesel fuel oil to the diesel generator shall be limited to 8,620 gallons. This fuel limit is equivalent to 2.604 tons of NOx. Compliance with this limit will assure that the $NO_X$ emissions from the entire source shall remain less than the de minimus level.**

**(c) At or before 8,620 gallons of No. 2 diesel fuel oil are combusted in the diesel generator or no later than nine (9) months after the date of start-up of operations (which ever occurs first), the diesel generator shall be removed from the site and the source of power shall be switched to offsite generated electricity.**

(**d**~~e~~) Any change or modification which may increase potential to emit from processes to twenty-five (25) tons per year of VOC ~~or $NO_x$~~ per year from this portable plant, shall cause this plant to be considered a major source under Emission Offset, 326 IAC 2-3, and shall require approval from IDEM, OAM prior to making the change.

D.1.5 Record Keeping Requirements

(a) To document compliance with Condition D.1.4, the Permittee shall maintain records of daily visible emission notations for the crushing, the screening and conveying operations.

(b) To document compliance with Condition D.1.1**(a)**, the Permittee shall maintain records at the plant of the steel mill slag input.

**(c) To document compliance with Conditions D.1.1(b) and (c), the Permittee shall maintain records in accordance with (1) through (3) below.**

**(1) Start-up date of operations,**

**(2) Actual No. 2 diesel fuel oil usage and equivalent $NO_X$ emissions, and**

**(3) Removal date of the diesel generator.**

(**d**~~e~~) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**D.1.6 Reporting Requirements**

**Quarterly summary to document compliance with operation condition numbers D.1.1(a) and D.1.1(b) shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter or six (6) month period being reported. These reports shall include the monthly input of steel slag, the amount of No. 2 diesel fuel oil used each month, the start-up date of operations and the removal date of the diesel generator. All records and reports shall use calendar months.**

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
# OFFICE OF AIR MANAGEMENT
## COMPLIANCE DATA SECTION
## Gary Division of Air Pollution Control

**Part 70 Source Modification Quarterly Report**

**Source Name:** U.S. Aggregates Inc.
**Source Address:** 1 North Broadway, Gary, Indiana 46402
**Mailing Address:** 5400 West 86th Street, Indianapolis, Indiana 46268
**Source Modification No.:** 089-11824-05210
**Facility:** Diesel powered electric generator
**Parameter:** Gallons of No. 2. diesel fuel oil
**Limit:** 8,620 gallons, equivalent to 2.604 tons of $NO_x$
**Start-up Date of Operation:** _____

**Removal Date of Diesel Generator (not to exceed nine (9) months from start-up date)** _____

**YEAR:** _____

| Month | Gallons of No. 2 Diesel Fuel Oil This Month | Gallons of No. 2 Diesel Fuel Oil Total From Start-up Date |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

9 **No deviation occurred in this month.**

9 **Deviation/s occurred in this month.**
**Deviation has been reported on:** _____

**Submitted by:** _____

**Title/Position:** _____

**Signature:** _____

**Date:** _____

**Phone:** _____

Upon further review, the OAM has decided to make the following changes to the Part 70 Operating Permit: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded)**:

1. Condition B.5(d) has had the following language added to indicate the procedure to incorporate this source modification into the Part 70 Operating Permit for U.S. Steel since it has not yet been issued.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

**However, in the event that the Title V application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:**

**(1) If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.**

**(2) If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.**

**(3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will issued after EPA review.**

# Indiana Department of Environmental Management
# Office of Air Management
# and Gary Division of Air Pollution Control

## Technical Support Document (TSD) for a Part 70 Significant Source Modification

**Source Background and Description**

**Source Name:** **U. S. Aggregates Inc.**
**Source Location:** **1 North Broadway, Gary, Indiana 46402**
**County:** **Lake**
**SIC Code:** **3295**
**Operation Permit No.:** **Considered as one (1) source with U.S. Steel Gary Works**
**Significant Source Modification No.:** **089-11824-05210**
**Permit Reviewer:** **Mark L. Kramer**

The Office of Air Management (OAM) has reviewed an application from U. S. Aggregates Inc. relating to the construction of the following emission units and pollution control devices:

One (1) portable crushing, screening and conveying plant, capacity: 400 tons of steel mill slag per hour, consisting of:

(a) One (1) grizzly hopper, known as GH-1, capacity: 400 tons of steel mill slag per hour.

(b) One (1) primary crusher, known as CR-1, capacity: 200 tons of steel mill slag per hour.

(c) One (1) conveyor, known as CO-1, capacity: 400 tons of steel mill slag per hour.

(d) One (1) radial stacker, known as CO-2, capacity: 175 tons of steel mill slag per hour.

(e) One (1) radial stacker, known as CO-3, capacity: 125 tons of steel mill slag per hour.

(f) One (1) radial stacker, known as CO-4, capacity: 50 tons of steel mill slag per hour.

(g) One (1) conveyor, known as CO-5, capacity: 50 tons of steel mill slag per hour.

(h) One (1) grizzly troughs, known as CO-6, capacity: 250 tons of steel mill slag per hour.

(i) One (1) 3-deck sizing screen, known as SS-1, equipped with water spray, known as CE-1, capacity: 400 tons of steel mill slag per hour.

(j) One (1) diesel powered electric generator, known as E-1, rated at168 horsepower or 0.426 million British thermal units per hour, exhausted through Stack E-1.

(k) One (1) storage tank, known as T-1, exhausted through stack T-1, capacity: 550 gallons of diesel fuel.

**History**

On January 28, 2000, U.S. Aggregates Inc submitted an application for a construction and operating permit to the OAM requesting to build a slag crushing and sizing operation within the boundaries of U.S. Steel Gary Works steel mill. U.S. Steel Gary Works has applied for a Part 70 permit on December 13, 1996 (T 089-7663-00175).

**Existing Approvals**

This operation does not have any prior approvals.

**Source Definition**

This steel mill consists of a source with an on-site contractor:

(a) U.S. Steel Gary Works, the primary operation, is located at 1 North Broadway, Gary, Indiana 46402 and

(b) U.S. Aggregates Inc., the supporting operation, is located at 1 North Broadway, Gary, Indiana 46402.

IDEM has determined even though U.S. Steel Gary Works and U.S. Aggregates Inc. are not under the common control of U.S. Steel Gary Works, these two plants are considered one source due to contractural control of the supply of slag and support. U.S. Steel Gary Works and U.S. Aggregates Inc. are considered one source.

**Enforcement Issue**

There are no enforcement actions pending.

**Stack Summary**

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature (EF) |
|---|---|---|---|---|---|
| E-1 | Diesel Generator | 15 | 0.167 | unknown | unknown |
| T-1 | Storage Tank | 4.0 | 0.167 | not applicable | ambient |

**Recommendation**

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on January 28, 2000. Addition information was received on February 23, 2000.

**Emission Calculations**

See pages 1 - 7 of 7 of Appendix A of this document for detailed emissions calculations.

**Potential To Emit of Modification**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| **Pollutant** | **Potential To Emit** (tons/year) |
|---|---|
| PM | 351 |
| $PM_{10}$ | 111 |
| $SO_2$ | 1.51 |
| VOC | 1.85 |
| CO | 4.92 |
| $NO_X$ | 22.8 |

| **HAPs** | **Potential To Emit** (tons/year) |
|---|---|
| Combustion Only | Negligible |

**Actual Emissions**

The following table shows the actual emissions from U.S. Steel Gary Works. This information reflects the 1992 OAM emission data.

| **Pollutant** | **Actual Emissions** (tons/year) |
|---|---|
| PM | 4,181 |
| $PM_{10}$ | 1,826 |
| $SO_2$ | 10,115 |
| VOC | 1,963 |
| CO | 175,432 |
| $NO_X$ | 7,031 |

No actual HAPs emissions were inventoried by IDEM for U.S. Steel Gary Works.

There are no actual emissions from U.S. Aggregates Company.

**County Attainment Status**

The source is located in Lake County.

| Pollutant | Status |
|---|---|
| $PM_{10}$ | nonattainment |
| $SO_2$ | nonattainment |
| $NO_2$ | nonattainment |
| Ozone | nonattainment |
| CO | attainment |
| Lead | attainment |

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and $NO_X$ emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as nonattainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Lake County has been classified as nonattainment for $PM_{10}$ and sulfur dioxide, . Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(c) Fugitive Emissions

Since source (U.S. Steel) is one of the 28 listed source categories under 326 IAC 2-2, the fugitive PM emissions are counted toward determination of PSD and Emission Offset applicability.

**Source Status**

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

| Pollutant | Emissions (tons/year) |
|---|---|
| PM | greater than 100 |
| $PM_{10}$ | greater than 100 |
| $SO_2$ | greater than 100 |
| VOC | greater than 25 |
| CO | greater than 100 |
| $NO_X$ | greater than 25 |

This existing source is a major stationary source because a severe nonattainment regulated pollutant is emitted at a rate of twenty-five (25) tons per year or more, a nonattainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or more and it is

one of the 28 listed source categories.

**Potential to Emit of Modification After Issuance**

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

| Pollutant | PM (tons/yr) | $PM_{10}$ (tons/yr) | $SO_2$ (tons/yr) | VOC (tons/yr) | CO (tons/yr) | $NO_x$ (tons/yr) |
|---|---|---|---|---|---|---|
| Proposed Modification | <25 | <15 | 1.51 | 1.85 | 4.92 | 22.8 |
| Contemporaneous Increases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Contemporaneous Decreases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net Emissions | <25 | <15 | 1.51 | 1.85 | 4.92 | 22.8 |
| Offset Significant Level | 25 | 15 | 40 | 25 | 100 | 25 |

The input of slag to the crushing and screening facilities shall not exceed 572,549 tons per year, equivalent to PM emissions after controls of less than twenty-five (25) tons per year including fugitive emissions. This input limit will also assure that the $PM_{10}$ emissions are less than fifteen (15) tons per year. This throughput limit was calculated as follows from the ratio of the limiting case (PM):

Offset Sig. Level of <25 TPY / 153 TPY PTE after controls * 400 TPH * 8,760 hrs/yr = < 572,549 TPY

This modification to an existing major stationary source is not major because the emissions increases are less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

**Portable Source**

(a) Initial Location
This is a portable source and its initial location is 1 North Broadway, Gary, Indiana 46402.

(b) PSD and Emission Offset Requirements
The emissions from this portable source were reviewed under the requirements of the Prevention of Significant Deterioration (PSD), 326 IAC 2-2, 40 CFR 52.21, and Emission Offset, 326 IAC 2-3.

(c) Fugitive Emissions

Since this source (U.S. Steel) is one of the twenty-eight (28) listed sources under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

(d) Local Agency

Based on the initial location of this source, the Gary Division of Air Pollution Control shall be contacted for additional air operating requirements. OAM has the authority to issue this

significant source modification.

**Part 70 Permit Determination**

326 IAC 2-7 (Part 70 Permit Program)

U.S. Steel has submitted their Part 70 (T 089-7663-00175) application for a Part 70 permit on December 13, 1996. U.S. Aggregates Inc. has to submit a Title V application prior to the startup of their operation.

**Justification for Modification**

(a) The Part 70 Operating Permit is being modified through a Part 70 Significant Source Modification to a yet to be issued Part 70 Operating Permit because the potential to emit before controls of this modification exceeds twenty five (25) tons per year. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4).

(b) Since the Part 70 Operating Permit for this source has not been issued yet, the approval of this Significant Source Modification will allow the source to construct and operate.

**Federal Rule Applicability**

(a) This crushing and screening of slag is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, 40 CFR 60.670 through 60.676, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) since the slag material being crushed is not a nonmetallic mineral pursuant to 40 CFR 60.671.

(b) This crushing and screening operation of slag is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, 40 CFR 60.380 through 60.686, Subpart LL (Standards of Performance for Metallic Mineral Processing Plants) since the operations are not producing metallic mineral concentrates from ore. None of these slag crushing and/or screening operations are performed in a mine or pit.

(c) The one (1) storage tank, known as T-1, with a capacity of 550 gallons of diesel fuel is not subject to 40 CFR 60.110b, Subpart Kb since its capacity is less than 40 cubic meters.

(d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

326 IAC 2-3 (Emission Offset)

This modification to an existing major stationary source is not major because the emissions increases are less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of $NO_X$ and one hundred (100) tons per year of $PM_{10}$ in Lake County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity emissions shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

This rule requires that the source not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations), fugitive particulate matter emissions except when located in Lake County shall be controlled according to the plan submitted on January 28, 2000. This plan consists of applying water on an as-needed basis to unpaved roads and storage piles.

**State Rule Applicability - Individual Facilities**

326 IAC 6-1 (Nonattainment Area Limitations)

In order to be able to relocate the portable concrete crushing plant to any nonattainment county designated by 326 IAC 6-1-7, the portable plant facilities shall meet the allowable PM emission limitation pursuant to 326 IAC 6-1-2 (a) of 0.03 grains per standard dry cubic feet per minute. However, pursuant to 326 IAC 6-1-2(g), all operations subject to 326 IAC 6-1-2 where the process is totally enclosed and thus it is practical to measure there from shall comply with the PM emission limit. The slag crushing and screening operation which are not enclosed is subject to 326 IAC 6-1-2(g) that requires compliance with 326 IAC 2, 326 IAC 5-1 and 326 IAC 6-4.

326 IAC 6-1-10.1 (Nonattainment area particulate limitations: Lake County $PM_{10}$ emission requirements)

Although U.S. Steel Gary Works is a listed source in 326 IAC 6-1-10.1(d) none of the facilities associated with the U.S. Aggregates Company operations are specifically cited, therefore this rule does not apply to the U.S. Aggregates' facilities.

326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements)

The source will be in violation of 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), if the opacity of fugitive particulate emissions exceeds ten percent (10%). Compliance with this opacity limit shall be achieved by controlling fugitive particulate matter emissions according to the plan submitted on January 28, 2000.

326 IAC 7-1.1 (Sulfur dioxide emission limitations)

Since the diesel generator does not have the potential to emit twenty-five (25) tons per year or more of $SO_2$, this rule is not applicable.

**Compliance Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

The portable crushing, screening and conveying plant has applicable compliance monitoring conditions as specified below:

Daily visible emissions notations of the particulate matter emissions from crushing, screening and conveying processes shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

These monitoring conditions are necessary ensure compliance with 326, IAC 5-1,326 IAC 6-1, 326 IAC 6-4 and 326 IAC 2-7 (Part 70).

**Conclusion**

The construction and operation of this portable crushing, screening and conveying plant shall be subject to the conditions of the attached proposed Significant Source Modification No. 089-11824-05210.

**Appendix A: Emission Calculations**

**Slag Processing**

| | |
|---|---|
| **Company Name:** | U.S. Aggregates Inc. |
| **Address City IN Zip:** | 1 North Broadway, Gary Indiana 46402 |
| **SSM:** | 089-11824 |
| **Plt ID:** | 089-05210 |
| **Reviewer:** | Mark L. Kramer |
| **Date:** | January 28, 2000 |

*** * emissions before controls * ***

**(TSP)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Storage | | | ** see page 2 ** | | | | | 1.86 | tons/yr | AP-42 Ch.11.2.3 (Fourth edition, no update) |
| Transporting | | | ** see page 3 ** | | | | | 275.40 | tons/yr | AP-42 Ch.13.2.2 (Supplement E, 9/98) |
| Loading & Unloading | 400 | ton/hr x | 0.0043 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 7.47 | tons/yr | AP-42 Ch.13.2.4 (Fifth edition, 1/95) |
| Crushing (primary) | 200 | ton/hr x | 0.00504 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 4.42 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Crushing (secondary) | 0 | ton/hr x | 0.00504 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 0.00 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Crushing (tertiary) | 0 | ton/hr x | 0.00504 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 0.00 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Screening | 400 | ton/hr x | 0.0315 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 55.19 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Conveyor Transfer | 400 | ton/hr x | 0.00294 | lb/ton | / 2000 lb/ton x | 8760 | hr/yr = | 5.15 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Total emissions before controls: | | | | | | | | 349.49 | tons/yr | |

* * emissions after controls * *

| | | | | | | |
|---|---|---|---|---|---|---|
| Storage | 1.86 | tons/yr x | 10% | emitted after controls = | 0.19 | tons/yr |
| Transporting | 275.40 | tons/yr x | 50% | emitted after controls = | 137.70 | tons/yr |
| Loading & Unloading | 7.47 | tons/yr x | 100% | emitted after controls = | 7.47 | tons/yr |
| Crushing (primary) | 4.42 | tons/yr x | 10% | emitted after controls = | 0.44 | tons/yr |
| Crushing (secondary) | 0.00 | tons/yr x | 0% | emitted after controls = | 0.00 | tons/yr |
| Crushing (tertiary) | 0.00 | tons/yr x | 0% | emitted after controls = | 0.00 | tons/yr |
| Screening | 55.19 | tons/yr x | 10% | emitted after controls = | 5.52 | tons/yr |
| Conveying | 5.15 | tons/yr x | 10% | emitted after controls = | 0.52 | tons/yr |
| Total emissions after controls: | | | | | 151.84 | tons/yr |

U.S. Aggregates Inc.
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* * fugitive vs. nonfugitive * *

| | | | | | | |
|---|---|---|---|---|---|---|
| Storage | 1.86 | tons/yr x | 10% | emitted after controls = | 0.19 | tons/yr |
| Transporting | 275.40 | tons/yr x | 50% | emitted after controls = | 137.70 | tons/yr |
| Loading / Unloading | 7.47 | tons/yr x | 100% | emitted after controls = | 7.47 | tons/yr |
| Total fugitive emissions: | | | | | 145.36 | tons/yr |
| | | | | | | |
| Crushing (primary) | 4.42 | tons/yr x | 10% | emitted after controls = | 0.44 | tons/yr |
| Crushing (secondary) | 0.00 | tons/yr x | 0% | emitted after controls = | 0.00 | tons/yr |
| Crushing (tertiary) | 0.00 | tons/yr x | 0% | emitted after controls = | 0.00 | tons/yr |
| Screening | 55.19 | tons/yr x | 10% | emitted after controls = | 5.52 | tons/yr |
| Conveying: | 5.15 | tons/yr x | 10% | emitted after controls = | 0.52 | tons/yr |
| Total nonfugitive emissions: | | | | | 6.475 | tons/yr |

* * storage * *

Storage emissions, which result from wind erosion, are determined by the following calculations:

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
= 9.26 lb/acre/day
where s = 8 % silt content of material
p = 125 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Ep (storage) = Ef*sc*(40 cuft/ton)/(2000 lb/ton)/(43560 sqft/acre)/(25 ft)*(365 day/yr)
= 1.86 tons/yr
where sc = 30 ,000 tons storage capacity Finished Product Only

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Gary, Indiana

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Four Axle Dump Truck

* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads,
based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).
Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

| | |
|---|---|
| 20.00 | trip/hr x |
| 0.5 | mile/trip x |
| 2 | (round trip ) x |
| 8760 | hr/yr = 175200 miles per year |

Method 1:

Ef = k*[(s/12)^0.8]*[(W/3)^b]/[(M/0.2)^c]
= 4.78 lb/mile

| | | |
|---|---|---|
| where k = | 10 | (particle size multiplier for PM-10 (k=10 for PM-30 or TSP) |
| s = | 4 | mean % silt content of unpaved roads |
| b = | 0.5 | Constant for PM-10 (b = 0.5 for PM-30 or TSP) |
| c = | 0.4 | Constant for PM-10 (c = 0.4 for PM-30 or TSP) |
| W = | 30.00 | tons average vehicle weight |
| M = | 2.5 | surface material moisture content, % (default is 0.2 for dry conditions) |

4.78 lb/mi x 175200 mi/yr = 418.84 tons/yr
2000 lb/ton

This method has a lower quality rating than Method 1.

Method 2 Ef = {k*[(s/12)^0.8]*[(W/3)^b]/[(Mdry/0.2)^c]}*[(365-p)/365]
= 3.14 lb/mile

| | | |
|---|---|---|
| where k = | 10 | (particle size multiplier for PM-10) (k=10 for PM-30 or TSP) |
| s = | 4 | mean % silt content of unpaved roads |
| b = | 0.5 | Constant for PM-10 (b = 0.5 for PM-30 or TSP) |
| c = | 0.4 | Constant for PM-10 (c = 0.4 for PM-30 or TSP) |
| W = | 30.00 | tons average vehicle weight |
| Mdry = | 2.5 | surface material moisture content, % (default is 0.2 for dry conditions) |
| p = | 125 | number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1) |

3.14 lb/mi x 175200 mi/yr = 275.40 tons/yr
2000 lb/ton

* * aggregate handling * *

The following calculations determine the amount of emissions created by truck
loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

Ef = k*(0.0032)* (U/5)^1.3/(M/2)^1.4
= 0.0043 lb/ton

| | | |
|---|---|---|
| where k = | 0.74 | (particle size multiplier) |
| U = | 10 | mile/hr mean wind speed |
| M = | 2.5 | % material moisture content |

**Appendix A: Emission Calculations**

**Slag Processing**

| | |
|---|---|
| **Company Name:** | U.S. Aggregates Inc. |
| **Address City IN Zip:** | 1 North Broadway, Gary Indiana 46402 |
| **Part 70:** | 089-11824 |
| **Plt ID:** | 089-05210 |
| **Reviewer:** | Mark L. Kramer |
| **Date:** | January 28, 2000 |



*** * emissions before controls * ***

**PM-10**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Storage | ** see page 2 ** | | | | | | 1.86 | tons/yr | AP-42 Ch.11.2.3 (Fourth edition, no update) |
| Transporting | ** see page 3 ** | | | | | | 73.22 | tons/yr | AP-42 Ch.13.2.2 (Supplement E, 9/98) |
| Loading & Unloading | 400 | ton/hr x | 0.0020 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 3.54 | tons/yr | AP-42 Ch.13.2.4 (Fifth edition, 1/95) |
| Crushing (primary) | 200 | ton/hr x | 0.0024 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 2.10 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Crushing (secondary) | 0 | ton/hr x | 0.0024 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 0.00 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Crushing (tertiary) | 0 | ton/hr x | 0.0024 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 0.00 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Screening | 400 | ton/hr x | 0.015 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 26.28 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Conveyor Transfer | 400 | ton/hr x | 0.0014 | lb/ton | / 2000 lb/ton x | 8760 hr/yr = | 2.45 | tons/yr | AP-42 Ch.11.19.2 (Fifth edition, 1/95) |
| Total emissions before controls: | | | | | | | 109.45 | tons/yr | |

* * emissions after controls * *

| | | | | | | |
|---|---|---|---|---|---|---|
| Storage | 1.86 | tons/yr x | 10% | emitted after controls = | 0.19 | tons/yr |
| Transporting | 73.22 | tons/yr x | 50% | emitted after controls = | 36.61 | tons/yr |
| Loading & Unloading | 3.54 | tons/yr x | 100% | emitted after controls = | 3.54 | tons/yr |
| Crushing (primary) | 2.10 | tons/yr x | 10% | emitted after controls = | 0.21 | tons/yr |
| Crushing (secondary) | 0.00 | tons/yr x | 10% | emitted after controls = | 0.00 | tons/yr |
| Crushing (tertiary) | 0.00 | tons/yr x | 10% | emitted after controls = | 0.00 | tons/yr |
| Screening | 26.28 | tons/yr x | 10% | emitted after controls = | 2.63 | tons/yr |
| Conveying | 2.45 | tons/yr x | 10% | emitted after controls = | 0.25 | tons/yr |
| Total emissions after controls: | | | | | 43.41 | tons/yr |

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* * fugitive vs. nonfugitive * *

| | | | | | | |
|---|---|---|---|---|---|---|
| Storage | 1.86 | tons/yr x | 10% | emitted after controls = | 0.19 | tons/yr |
| Transporting | 73.22 | tons/yr x | 50% | emitted after controls = | 36.61 | tons/yr |
| Loading / Unloading | 3.54 | tons/yr x | 100% | emitted after controls = | 3.54 | tons/yr |
| Total fugitive emissions: | | | | | 40.33 | tons/yr |
| | | | | | | |
| Crushing (primary) | 2.10 | tons/yr x | 10% | emitted after controls = | 0.21 | tons/yr |
| Crushing (secondary) | 0.00 | tons/yr x | 10% | emitted after controls = | 0.00 | tons/yr |
| Crushing (tertiary) | 0.00 | tons/yr x | 10% | emitted after controls = | 0.00 | tons/yr |
| Screening | 26.28 | tons/yr x | 10% | emitted after controls = | 2.63 | tons/yr |
| Conveying: | 2.45 | tons/yr x | 10% | emitted after controls = | 0.25 | tons/yr |
| Total nonfugitive emissions: | | | | | 3.084 | tons/yr |

* * storage * *

Storage emissions, which result from wind erosion, are determined by the following calculations:

| | | |
|---|---|---|
| Ef = | 1.7*(s/1.5)*(365-p)/235*(f/15) | |
| = | 9.26 | lb/acre/day |
| where s = | 8 | % silt content of material |
| p = | 125 | days of rain greater than or equal to 0.01 inches |
| f = | 15 | % of wind greater than or equal to 12 mph |

Ep (storage) = Ef*sc*(40 cuft/ton)/(2000 lb/ton)/(43560 sqft/acre)/(25 ft)*(365 day/yr)

| | | |
|---|---|---|
| = | 1.86 | tons/yr |
| where sc = | 30 | ,000 tons storage capacity Finished Product Only |

U.S. Aggregates Inc.
Gary, Indiana

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Four Axle Dump Truck

* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads,
based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).
Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

20.00 trip/hr x (ASSUME 400 TONS PER HOUR ALL TRUCKS)
0.5 mile/trip x
2 (round trip ) x
8760 hr/yr = 175200 miles per year

Method 1: Ef = k*[(s/12)^0.8]*[(W/3)^b]/[(M/0.2)^c]
= 1.27 lb/mile

| | | |
|---|---|---|
| where k = | 2.6 | (particle size multiplier for PM-10 (k=10 for PM-30 or TSP) |
| s = | 4 | mean % silt content of unpaved roads |
| b = | 0.4 | Constant for PM-10 (b = 0.5 for PM-30 or TSP) |
| c = | 0.3 | Constant for PM-10 (c = 0.4 for PM-30 or TSP) |
| W = | 30.00 | tons average vehicle weight |
| M = | 2.5 | surface material moisture content, % (default is 0.2 for dry conditions) |

1.27 lb/mi x 175200 mi/yr = 111.35 tons/yr
2000 lb/ton

This method has a lower quality rating than Method 1.

Method 2 Ef = {k*[(s/12)^0.8]*[(W/3)^b]/[(Mdry/0.2)^c]}*[(365-p)/365]
= 0.84 lb/mile

| | | |
|---|---|---|
| where k = | 2.6 | (particle size multiplier for PM-10) (k=10 for PM-30 or TSP) |
| s = | 4 | mean % silt content of unpaved roads |
| b = | 0.4 | Constant for PM-10 (b = 0.5 for PM-30 or TSP) |
| c = | 0.3 | Constant for PM-10 (c = 0.4 for PM-30 or TSP) |
| W = | 30.00 | tons average vehicle weight |
| Mdry = | 2.5 | surface material moisture content, % (default is 0.2 for dry conditions) |
| p = | 125 | number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1) |

0.84 lb/mi x 175200 mi/yr = 73.22 tons/yr
2000 lb/ton

* * aggregate handling * *

The following calculations determine the amount of emissions created by truck
loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

Ef = k*(0.0032)* (U/5)^1.3/(M/2)^1.4
= 0.0020 lb/ton

| | | |
|---|---|---|
| where k = | 0.35 | (particle size multiplier) |
| U = | 10 | mile/hr mean wind speed |
| M = | 2.5 | % material moisture content |

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**B. Emissions calculated based on output rating (hp)**

| Heat Input Capacity Horsepower (hp) | Potential Throughput hp-hr/yr |
|---|---|
| 168.0 | 1471680.0 |

| | Pollutant | | | | | |
|---|---|---|---|---|---|---|
| | PM* | PM10* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/hp-hr | 0.0022 | 0.0022 | 0.0021 | 0.0310 | 0.0025 | 0.0067 |
| Potential Emission in tons/yr | 1.62 | 1.62 | 1.51 | 22.8 | 1.85 | 4.92 |

**Methodology**

Potential Througput (hp-hr/yr) = hp * 8760 hr/yr

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2
Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton )
Emission (tons/yr) = [Potential Throughput (hp-/hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton )
*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.